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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/072,527 | 02/05/2002 | Thomas B. Bolt | Q02-1037-US1/ 11198.82 | 2908 |

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EXAMINER

VERBRUGGE, KEVIN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2188

8

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

fn

Office Action Summary

Application No.

10/072,527

Applicant(s)

BOLT ET AL.

Examiner

Kevin Verbrugge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This second non-final Office action is in response to Amendment A, filed 4/21/04, which amended several claims. Claims 1-38 are pending. All rejections and objections not repeated below are withdrawn. Applicant's arguments are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-11, 14-21, 23, 35, 36, 37, and 38 and claims dependent thereon are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "approximately" in claims 8-11, 14-21, 23, 37, and 38 is a relative term which renders the claim indefinite. The term "approximately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "substantially" in claims 35 and 36 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification

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does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5-7, 13, 30, and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,666,538 to DeNicola who discloses a disk power manager for network servers.

Regarding claims 1 and 30, DeNicola shows the claimed storage system as network server 110 in Figs. 1, 2, and 10.

He does not explicitly show the claimed housing but it is inherent in his device as the structure which securely holds the disk drives and other components of his network server 110. Such housings are required to maintain the proper positioning of the disk drives and other components during shipping and normal operations.

He shows the claimed disk drives as disk drives 240, 241, and 242.

He shows the claimed controller that controls the disk drives as SCSI disk controller 210. Furthermore, he teaches that at least two of the disk drives are in

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different modes during the transfer of data to at least one of the disk drives since he teaches that each disk is controlled independently of the other disks. In other words, at any given point in time, each disk can be spun up (active) or spun down (inactive), regardless of the state of the other disks in the system (see column 5, lines 1-2, column 6, lines 50-55, column 7, lines 14-15 and 32-42, column 8, lines 20-25 and 63-65, column 9, lines 5-8 and 63-64, column 10 lines 17-18, 31-33, and 47-65, column 11, lines 11-12, and column 12, line 14).

Regarding claims 5-7 and 32-34, DeNicola explicitly teaches that disk 242 could be spun up while disks 241 and 240 are spun down at column 13, lines 14-19.

Regarding claim 13, DeNicola shows the claimed combination in Fig. 1 with a host system comprising any of the user terminals 120, for example.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 4, 8-12, 14-29, 31, and 35-38, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,666,538 to DeNicola who discloses a disk power manager for network servers.

Regarding claims 2 and 31, DeNicola does not explicitly teach that his controller directs data to a first subset of disk drives and a second subset of disk drives simultaneously as claimed.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use DeNicola's controller to direct data to a first subset of drives and a second subset of drives simultaneously since he teaches that "the disk power manager could easily be adapted for use with redundant arrays of inexpensive disks (RAIDs)" at column 13, lines 30-32, and one of the most basic RAID arrangements is RAID 1, where one set of drives is mirrored on another set of drives and both sets are written simultaneously. RAID 1 provides high performance and high reliability, since the two sets can be read independently (high performance) and since a complete duplicate of the data exists even if one of the sets of drives fails (high reliability).

Regarding claim 3, DeNicola does not disclose that his device has at least one subset with at least five disk drives as claimed. However, the number of disk drives included in a subset of disk drives is an obvious matter of design choice, with the number of disks used being affected by things like cost, size, availability, capacity, speed, etc.

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Regarding claim 4, DeNicola does not mention using parity protection in his device. However, since he mentions RAIDs as mentioned above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use one of the RAID levels which use parity protection since the parity protection levels of RAID require less storage space than the fully redundant RAID level 1 (mirroring).

Regarding claims 8-12, 14-21, 23-28, and 35-38, the actual number of spun down drives at any one time is an obvious matter of design choice, where the designer needs to balance the performance losses of a greater number of drives being inactive (taking a finite time to become activated once called on) with the power and heat costs of a greater number of drives being active at any one time (since drives use more power and generate more heat when active). Furthermore, the claimed arrangements are all an obvious matter of design choice. The number of rails, rows, and drives are all a matter of design choice, as are the number of drives that are in any mode at any given time.

Regarding claims 22 and 29, DeNicola shows the claimed combination in Fig. 1 with a host system comprising any of the user terminals 120, for example.

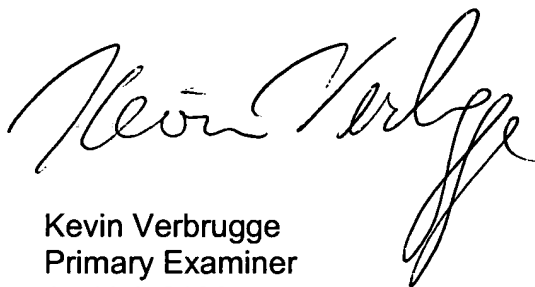
Conclusion

Any inquiry concerning a communication from the Examiner should be directed to the Examiner by phone at (703) 308-6663.

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Any response to this action should be labeled appropriately (serial number, Art Unit 2188, and After-Final, Official, or Draft) and mailed to Commissioner for Patents, Washington, D.C. 20231, faxed to (703) 872-9306, or delivered to Crystal Park 2, 2121 Crystal Drive, Arlington, VA, 4th Floor Receptionist.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

A handwritten signature in black ink, appearing to read "Kevin Verbrugge", with a stylized, flowing script.

Kevin Verbrugge
Primary Examiner
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